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(54) **Subsurface modelling from seismic data and secondary measurements**

(57) A multivariate stochastic simulation application involves the mapping of a primary variable from a combination for sparse primary data and more densely sampled secondary data. The method is applicable when the relationship between the simulated primary variable and one or more secondary variables is non-linear. The

method employs a Bayesian updating rule to build a local posterior distribution for the primary variable at each simulated location. The posterior distribution is the product of a Gaussian kernel function obtained by simple kriging of the primary variable and a secondary probability function obtained directly from a scatter diagram between primary and secondary variables.

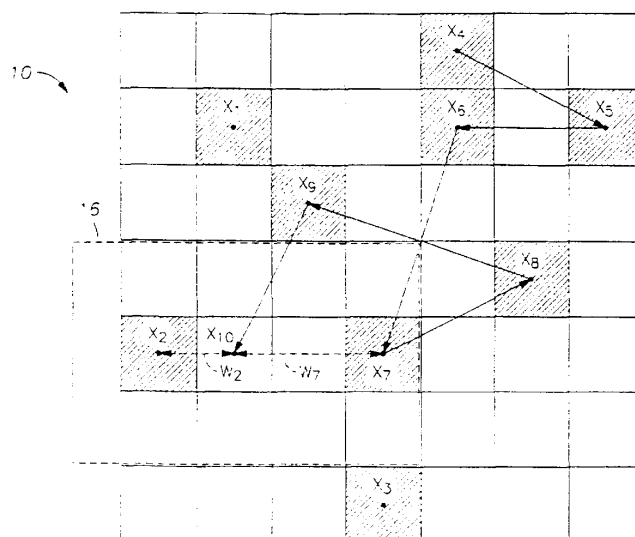


FIG. 1



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 96 30 4631

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	LORTZER G J M ET AL: "AN INTEGRATED APPROACH TO LITHOLOGIC INVERSION-PART I" GEOPHYSICS, vol. 57, no. 2, 1 February 1992, pages 233-244, XP000330780 * page 240 - page 243 * ---	1-13	G01V11/00 G01V1/28
D,A	US 5 416 750 A (DOYEN PHILIPPE M ET AL) 16 May 1995 * abstract * ---	1-13	
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			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			G01V
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 May 1999	Examiner Swartjes, H
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 96 30 4631

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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28-05-1999

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